Preliminary

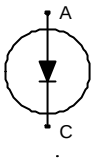
SIDC42D120E

Fast switching diode chip in EMCON-Technology

FEATURES:
- 1200V EMCON technology 130 µm chip
- soft , fast switching
- low reverse recovery charge
- small temperature coefficient

This chip is used for:
- EUPEC power modules and discrete devices

Applications:
- SMPS, resonant applications, drives



Chip Type	V_{CE}	I_{Cn}	Die Size	Package	Ordering Code
SIDC42D120E	1200V	50A	6.50 x 6.50 mm^2	sawn on foil	C67047-A4680

MECHANICAL PARAMETER:

Raster size	6.50 x 6.50	mm^2
Area total / active	42.25 / 33.99	
Anode pad size	5.08 x 5.08	
Thickness	130	µm
Wafer size	125	mm
Flat position	180	deg
Max. possible chips per wafer	226	
Passivation frontside	Photoimide	
Anode metalization	3200 nm Al Si 1%	
Cathode metalization	1400 nm Ni Ag –system suitable for epoxy and soft solder die bonding	
Die bond	electrically conductive glue or solder	
Wire bond	Al, ≤500µm	
Reject Ink Dot Size	tbd	
Recommended Storage Environment	store in original container, in dry nitrogen, < 6 month	

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Maximum Ratings

Parameter	Symbol	Condition	Value	Unit
Repetitive peak reverse voltage	V_{RRM}		1200	V
Continous forward current limited by T_{jmax}	I_F		50	A
Single pulse forward current (depending on wire bond configuration)	I_{FSM}	t_P = 10 ms sinusoidal	tbd	
Maximum repetitive forward current limited by T_{jmax}	I_{FRM}		100	
Operating junction and storage temperature	T_j , T_{stg}		-55...+150	°C

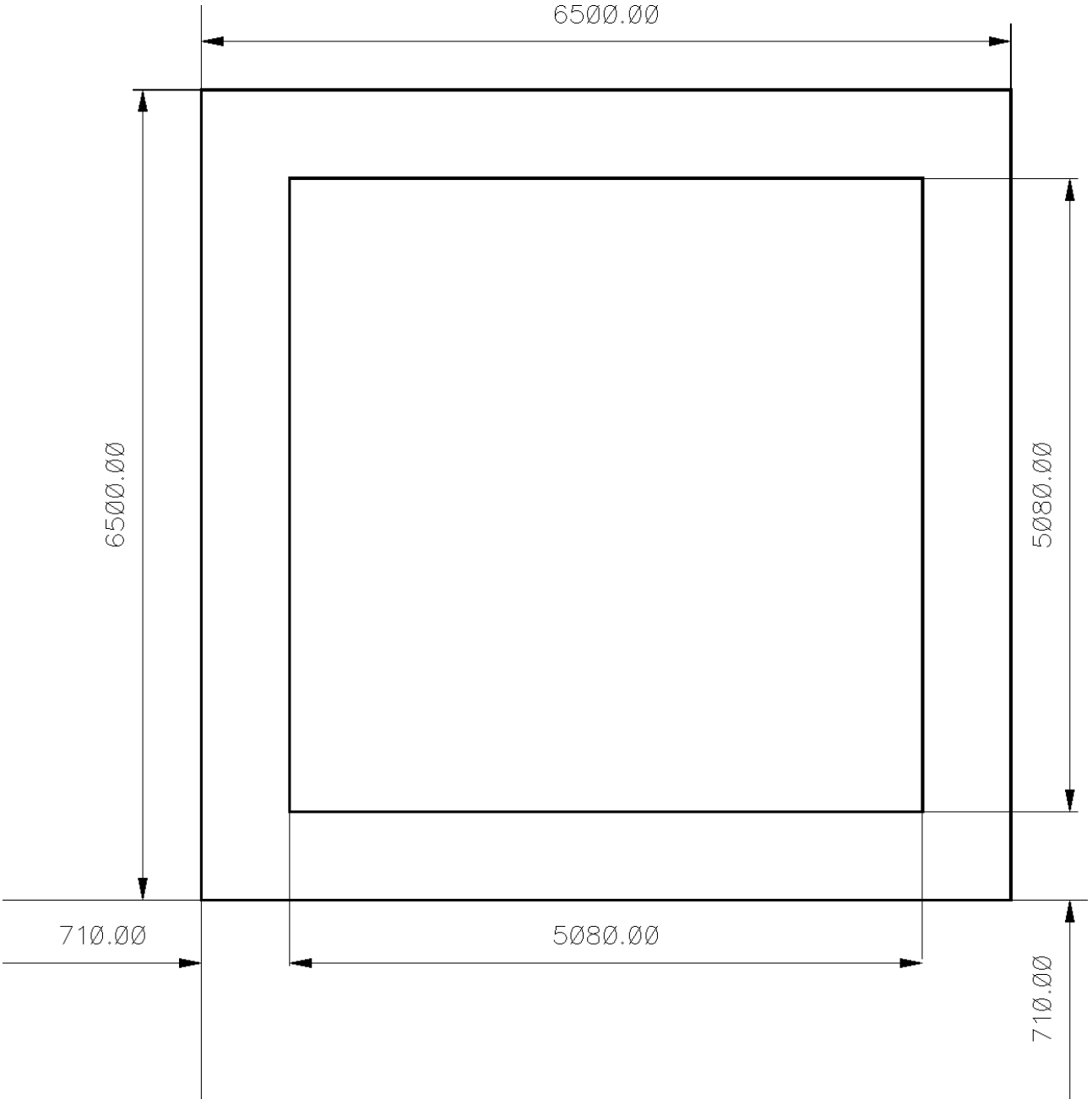
Static Electrical Characteristics (tested on chip), T_j=25 °C, unless otherwise specified

Parameter	Symbol	Conditions		Value			Unit
				min.	Typ.	max.	
Reverse leakage current	I_R	V_R=1200V	T_j=25°C			250	µA
Cathode-Anode breakdown Voltage	V_{Br}	I_R=4mA	T_j=25°C	1200			V
Forward voltage drop	V_F	I_F=50A	T_j=25°C		1.90		V

Dynamic Electrical Characteristics, at T_j = 25 °C, unless otherwise specified, tested at component

Parameter	Symbol	Conditions		Value			Unit
				min.	Typ.	max.	
Reverse recovery time	t_{rr1}	I_F=50A	T_j = 25 °C		tbd		ns
	t_{rr2}	di/dt=1300A/ms V_R=600V	T_j = 150 °C				
Peak recovery current	I_{RRM1}	I_F=50A	T_j = 25 °C		52		A
	I_{RRM2}	di/dt=1300A/ms V_R= 600V	T_j = 150 °C		66		
Reverse recovery charge	Q_{rr1}	I_F=50A	T_j=25°C		5.1		nC
	Q_{rr2}	di/dt=1300A/ms V_R= 600V	T_j=150°C		10.7		
Peak rate of fall of reverse recovery current	di_{rr1}/dt	I_F=50A	T_j=25°C		tbd		A/µs
	di_{rr2}/dt	di/dt=1300A/ms V_R= 600V	T_j=150°C				
Softness	S1	I_F=50A	T_j=25°C		tbd		1
	S2	di/dt=1300A/ms V_R= 600V	T_j=150°C				

CHIP DRAWING:



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FURTHER ELECTRICAL CHARACTERISTICS:

This chip data sheet refers to the device data sheet	INFINEON TECHNOLOGIES / EUPEC	tbd

Description:

AQL 0,65 for visual inspection according to failure catalog

Electrostatic Discharge Sensitive Device according to MIL-STD 883

Test-Normen Villach/Prüffeld

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